

**WHAT IS CLAIMED IS:**

1. A paper product that includes at least one paper web, said paper web comprising:

5 hardwood fibers treated with a first hydrolytic enzyme capable of hydrolyzing said hardwood fibers to form aldehyde groups predominantly on the surface of said hardwood fibers, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 10 s.e.u. per gram of oven-dried pulp; and

10 an additive applied to said paper web, said additive being selected from the group consisting of a cross-linking agent, a strength agent, a debonder, and combinations thereof.

2. A paper product as defined in claim 1, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 5 s.e.u. per gram of oven-dried pulp.

15 3. A paper product as defined in claim 1, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 2 s.e.u. per gram of oven-dried pulp.

4. A paper product as defined in claim 1, further comprising softwood fibers.

20 5. A paper product as defined in claim 4, wherein at least a portion of said softwood fibers are treated with a second hydrolytic enzyme capable of hydrolyzing said softwood fibers to form aldehyde groups predominantly on the surface of said softwood fibers.

25 6. A paper product as defined in claim 5, wherein the dosage of said second hydrolytic enzyme is from about 0.1 to about 10 s.e.u. per gram of oven-dried pulp.

7. A paper product as defined in claim 5, wherein the dosage of said second hydrolytic enzyme is from about 0.1 to about 5 s.e.u. per gram of oven-dried pulp.

8. A paper product as defined in claim 5, wherein the dosage of said second hydrolytic enzyme is from about 0.1 to about 2 s.e.u. per gram of oven-dried pulp.

5 9. A paper product as defined in claim 1, wherein said first hydrolytic enzyme comprises *endo*-glucanase.

10 10. A paper product as defined in claim 9, wherein said first hydrolytic enzyme comprises cellulose-binding domain free *endo*-glucanase.

11. A paper product as defined in claim 5, wherein said second hydrolytic enzyme comprises *endo*-glucanase.

12. A paper product as defined in claim 11, wherein said second hydrolytic enzyme comprises cellulose-binding domain free *endo*-glucanase.

13. A paper product as defined in claim 1, wherein a debonder is incorporated into said paper product.

14. A paper product as defined in claim 1, wherein a cross-linking agent is incorporated into said paper product.

15 15. A paper product as defined in claim 14, wherein said cross-linking agent comprises a starch.

20 16. A paper product as defined in claim 1, wherein said paper web is single-layered.

17. A paper product as defined in claim 1, wherein said paper web is multi-layered.

25 18. A paper product that includes a multilayered paper web, said multilayered paper web comprising:

30 a first layer containing hardwood fibers, wherein at least a portion of said eucalyptus fibers are treated with a first hydrolytic enzyme capable of hydrolyzing said hardwood fibers to form aldehyde groups predominantly on the surface of said hardwood fibers, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 10 s.e.u. per

dosage of said first hydrolytic enzyme is from about 0.1 to about 10 s.e.u. per gram of oven-dried pulp, wherein said first hydrolytic enzyme comprises *endo*-glucanase;

a second layer containing softwood fibers; and

5 wherein an additive is applied to said paper web, said additive being selected from the group consisting of a cross-linking agent, a strength agent, a debonder, and combinations thereof.

10 30 19. A paper product as defined in claim 18, wherein at least a portion of said softwood fibers are treated with a second hydrolytic enzyme capable of hydrolyzing said softwood fibers to form aldehyde groups predominantly on the surface of said softwood fibers.

31 20. A paper product as defined in claim 19, wherein the dosage of said second hydrolytic enzyme is from about 0.1 to about 5 s.e.u. per gram of oven-dried pulp.

15 32 21. A paper product as defined in claim 19, wherein the dosage of said second hydrolytic enzyme is from about 0.1 to about 2 s.e.u. per gram of oven-dried pulp.

20 33 22. A paper product as defined in claim 18, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 5 s.e.u. per gram of oven-dried pulp.

34 23. A paper product as defined in claim 18, wherein the dosage of said first hydrolytic enzyme is from about 0.1 to about 2 s.e.u. per gram of oven-dried pulp.

25 35 24. A paper product as defined in claim 18, wherein said first layer includes an additive selected from the group consisting of a cross-linking agent, a strength agent, a debonder, and combinations thereof

36 25. A paper product as defined in claim 18, wherein said second layer includes an additive selected from the group consisting of a cross-linking agent, a strength agent, a debonder, and combinations thereof.

37 26. A paper product as defined in claim 18, further comprising a third layer containing fibers selected from the group consisting of hardwood fibers, softwood fibers, and combinations thereof.

5 27. A paper product as defined in claim 26, wherein said third layer includes an additive selected from the group consisting of a cross-linking agent, a strength agent, a debonder, and combinations thereof.

28 28. A paper product as defined in claim 26, wherein at least a portion of said fibers of said third layer are treated with a third hydrolytic enzyme capable of hydrolyzing said fibers to form aldehyde groups predominantly on the surface of said fibers.)

29 29. A paper product as defined in claim 28, wherein the dosage of said third hydrolytic enzyme is from about 0.1 to about 10 s.e.u. per gram of oven-dried pulp.

30 30. A paper product as defined in claim 28, wherein the dosage of said third hydrolytic enzyme is from about 0.1 to about 5 s.e.u. per gram of oven-dried pulp.

31 31. A paper product as defined in claim 28, wherein the dosage of said third hydrolytic enzyme is from about 0.1 to about 2 s.e.u. per gram of oven-dried pulp.

32 32. A paper product as defined in claim 26, wherein said first layer is positioned between said third layer and said second layer.

33 33. A paper product as defined in claim 26, wherein said third layer is positioned between said first layer and said second layer.

34 34. A paper product as defined in claim 18, wherein said first hydrolytic enzyme comprises cellulosic-binding-domain free *endo*-glucanase.

35 35. A paper product as defined in claim 19, wherein said second hydrolytic enzyme comprises cellulosic-binding-domain free *endo*-glucanase.

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